

Text and photos by Lawson Wood

First scientifically described by Gannerus in 1765 from a specimen in Norway, there is an earlier published reference to the shark in 1739 in Ireland. The basking shark (*Cetorhinus maximus*) is one of the world's largest sharks found in temperate waters, with only the whale shark (*Rhynchodon typus*) being larger. It is the only species in the genus *Cetorhinus*. Its name is derived from the Greek *ketos*, meaning marine monster, or whale; *rhinos*, meaning a long nose; and *maximus*, kind of gives the game away, meaning *great*. Although massive in size at lengths up to 12m (40ft) long, the basking shark is harmless, eating only microscopic plankton, which it sieves through its gill-rakers at the rate of 2,000 tons of water an hour.

Unlike the scientific findings that there are now recognized several different species of killer whale (orca) there is only one distinct species of basking shark,

despite their wide ranging distribution. Along with the whale shark and megamouth shark, the basking shark is one of only three sharks which are known to filter-feed. But unlike the whale shark and megamouth shark, which are also known to use 'suction' to aid their feeding, the basking shark only feeds by swimming and allowing the water to pass through its gills which trap the zooplankton, small fish and fish eggs.

Life of a basking shark

Little is known about the life of this massive shark, other than that it was born to travel. Whilst we know that some of the larger whales travel thousands of miles between their breeding grounds and birthing bays, basking sharks are similarly adept and have been electronically tracked to cover massive distances also. Their common name derives from their habit of 'sunning' themselves on the surface with their backs and fins clear of

the water.

One female in particular had been tagged off the west coast of Scotland and proceeded to travel into the Mediterranean during the winter months where it is thought that they have their pups. That spring, the shark travelled around the United Kingdom, went north to Iceland and travelled south past Greenland, the east coast of the United States and the signal was finally lost somewhere off Cuba!

They are distributed widely throughout the world and are recorded on the eastern United States from Newfoundland to Florida and Cuba; from Alaska to Mexico along the western flanks of North America; from Ecuador to Chile; Argentina and the Falklands; South Africa; Southern Australia and Tasmania; north and south New Zealand; around Japan, China and Korea and from the Canaries, right through most of the Mediterranean, all around the

The Basking Shark

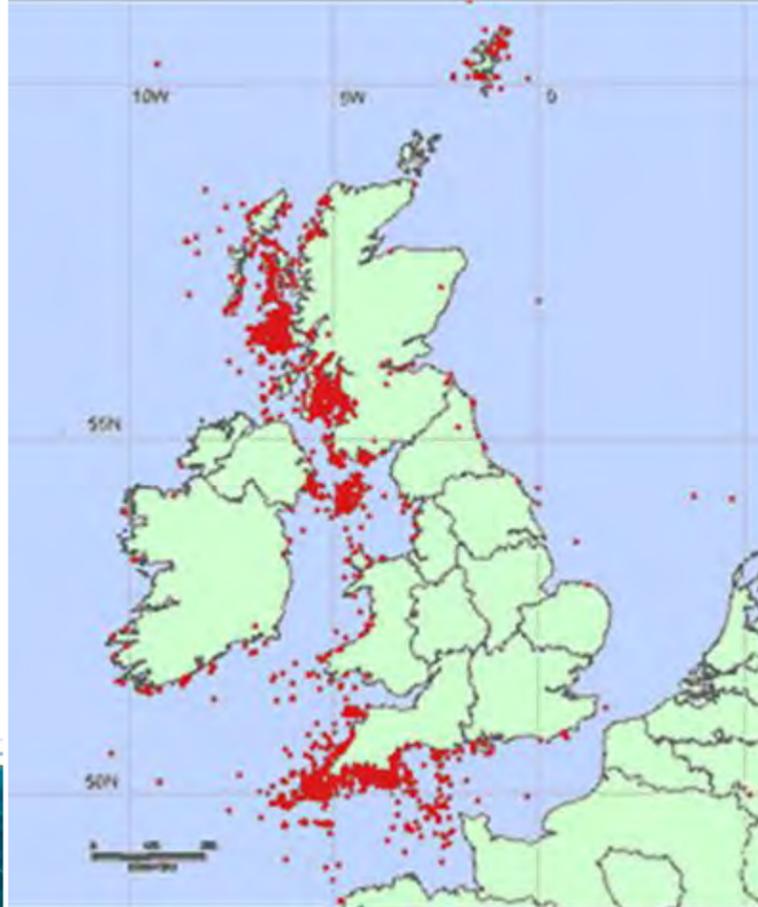




United Kingdom and Ireland, around Scandinavia to the White Sea and onwards to Iceland and Greenland.

Travelling at around two to three knots, they feed at the surface, or just below, and are usually spotted by the tell-tail signs of their pointed snout out of the water as well as their large triangular

dorsal fin and tail fin, making three distinct surface contacts all at the same time. They are also known to feed in the various zooplankton levels found off the continental shelf and are thought to migrate between deep



Basking shark hotspots in the United Kingdom (left); Gaping mouth of a basking shark feeding on plankton (right); View of the basking shark from the side (lower left)

hotspots, such as Cornwall, the Isle of Man and Ballyshannon in Ireland.

Hunted

Once hunted extensively for the oil from their livers, the most famous fishery was at Achill, County Mayo when the fishery caught over 9,000 individuals between 1950 and 1964. Unfortunately, the last targeted fishing for these sharks was done by the Norwegians in 2006, but they had been catching around 4,000 sharks each year

prior to this. When prices dropped worldwide for the liver oil, the fishermen more than made up the loss by selling the fins with prices at around US\$1000 to \$2400 per fish caught. You can see why their plight is of international importance.

Thankfully there is now no active fishery in European, American or Australasian waters, although Norwegians are still allowed to land them as bycatch. New Zealand still allows finning and basking sharks are sometimes caught as bycatch over the hoki spawning grounds. These fins are sold under licence.

Absent from British waters from November through to March or April

water and the surface to take advantage of various migrating plankton populations.

Hotspots

Scottish Natural Heritage have discovered that there are a few 'hot-spots' on the west coast of Scotland with shoals of over 50-100 basking sharks in each group including the Isle of Coll and an offshore group of rocky mounts called Hyskeir found near the Isle of Canna. Further research has discovered that there is a deep trench that runs between the Outer Hebrides and mainland west Scotland, and this undersea highway is being used by all manner of marine mammals, too, such as sperm whales. A recent electronic triggering survey has indicated that over 900 basking sharks tripped the trigger as they moved north past Hyskeir. These figures are quite phenomenal, and it is now reckoned that there are more basking sharks found in Scottish waters than any other place on the planet. It is also widely understood that if we look back at historical records of where the sharks used to be hunted for their livers, these should also indicate other

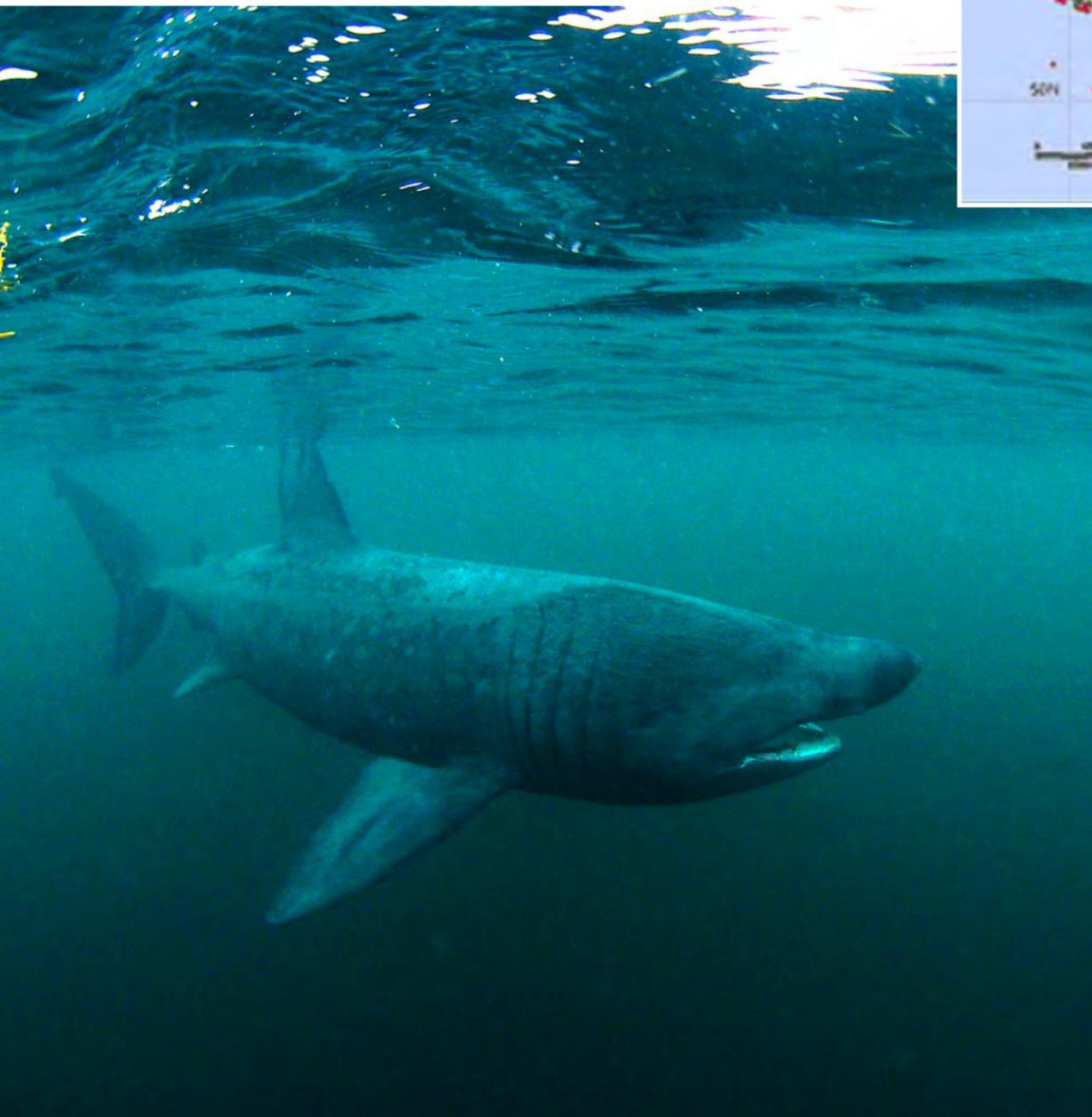
Basking Sharks



(depending on the water temperature and subsequent zooplankton bloom), it was widely thought that they all migrate beyond the continental shelf, however on a deep dive off Fort William in Loch Linnhe on the west coast of Scotland, my dive buddy and I received one of those life defining frights when we came face to face with a simply massive basking shark, which seemed to be resting at a depth of 42m (140ft)—until we startled it!

Reproduction

Limited information is available on their reproduction, but one caught female shark was reported to have given birth



Feeding basking shark (below); Detail view of the gills that filter the water passing through the gaping mouth of the basking shark (lower right)



to around five live young all around 1.8m (6ft) long. This would indicate that the sharks are ovoviparous with a gestation period of around three years. The young hatch from the eggs inside the female and their long pointed snouts are thought to be an adaptation to help them feed whilst still in the womb. It is also estimated that males will be around 12-16 years of age before they reach sexual maturity and females at around 18 years old. What looks like mating behaviour has been observed with several individuals swimming nose to tail, actually touching each other and seemingly appearing to be so much 'in the zone' that they are completely oblivious to their surrounds. Like many sharks, copulation wounds are quite obvious during our summer months, indicating that this is the

prime time for reproduction with warm waters, an abundance of food and hundreds of sharks all living and eating together.

Off the Isle of Coll, I personally witnessed at least one basking shark breaching similar to a whale, as there were five breachings all in quick succession. Is this part of the same sexual frenzy, was it just jumping for joy; was something much larger and more sinister after it, or was it clearing itself of parasites? It is quite clear that we still have an awful lot to learn about this wonderful shark.

Tourism

Since I live in Scotland, I have personally witnessed basking sharks in a number of locations on the west coast as well as the east coast where I live. I am also very

aware of the increase in 'eco-tourism' interest in the basking sharks, and when a friend, Shane Wasik, founded Basking Shark Scotland, it seemed only natural for me to tag along and see what all the fuss was about.

During the last week of August, Shane managed to squeeze me onto his last trip of the season to try and photograph the basking sharks that congregate off the Island of Coll each summer season. Sightings had been rather sporadic and very few individuals had been seen from Cornwall all the way up the west coast of Scotland due to the water temperature being much colder than normal, earlier in the year, hence the annual plankton bloom was also delayed.

Thankfully for me and the others on the boat, this late plankton bloom had brought an abundance of sharks. On a quick check of the area, Shane had counted around 60 basking sharks all feeding on the surface within a small area of about a mile of coastline off the south of the Island of Coll.

For the first time, I now had a true appreciation of the behaviour of the animal whilst it is feeding. The 'Money Shot' is the open mouth feeding on plankton view. My observations showed that their forward facing eyes were placed very close to the end of their long pointy noses, which gives them more spatial vision to avoid anything big in front of them—namely



an old clumsy fart of a diver like me, snorkeling in my drysuit!

The sharks would also avoid the large lions' mane jellyfish where they were abundant, and if they accidentally

swallowed one, they would sort of hiccup to spit the jellyfish back out. Clearly they were interested in only microscopic plankton.

The boat's captain maneuvered us



Topside view of the basking shark fins and pointed nose above the water's surface (below); Swimming with a basking shark (right); Side view of feeding basking shark with gaping mouth (lower left)



somewhere in the path of where we thought that the sharks would pass, to allow for as minimal contact as possible. Shane told us to enter the water quietly with as little splash as possible to avoid

scaring the sharks away from their intended trajectory.

Once in the water, it took a while to understand some of the behaviour and to hopefully allow the sharks to get used

to you. The more you swim after the shark, the more it is aware of you, and the more it will turn away from you, necessitating you to swim faster and turn tighter circles with the shark until you are absolutely pooped!

Stopping to catch my breath, taking stock of what was happening and getting more air into my old tired lungs, I heard Shane shouting at me (AGAIN!) "It's behind you!" This became a bit of a standing/swimming joke between us and the, "He's behind you—Oh no, it's not!" rang loud off Coll.

Close observation showed that the sharks would turn circles anyway, when there were large concentrations of plankton, so by waiting quietly and conserving my strength, I could gauge which direction the shark was moving and try and head it off at the pass (but remember that the open mouth and nose are about five metres in front of the pointed dorsal fin).

Gradually the shark's awareness includes you in its forward vision, and by waiting (whilst swimming), the shark will

come closer and will avoid you, just like it avoids the lion's mane jellyfish. Damn it, but I didn't. I got stung around my wrists and hands. Wear protection!

With my 'money shot' in the bag, plus some very nice moving images, I am so definitely coming back next year where (believe it or not) there are more basking sharks in Scottish waters than any other place on the planet!

Photo notes

My camera for this trip was the top end micro four thirds camera (Olympus OMD EM5) in a Nauticam housing supplied by Alex Tattersall. The main beauty of this rig is that it is small—about half the size and weight of a conventional DSLR camera and housing, therefore easier to lug around with less drag. In addition, it is able to take numerous photographs on its motor drive, but at the press of

one button, it will immediately switch to movie mode.

My first encounters with the sharks taught me so much about what to do the next time, but the encounters are really exhausting, as these grand beasts are swimming constantly and not hanging back waiting for you to catch up with them. After several attempts, perseverance, empathy and understanding, plus a lot of luck, I was able to fulfill a lifelong dream and photograph one of the largest fish in the sea and in Scottish waters!

Since 1998, the basking shark is fully protected under Appendix II of CITES (Convention on International Trade in Endangered Species of flora and fauna). Sadly, it is still hunted in Asian waters for their fins.

For more information, visit: www.baskingsharkscotland.co.uk ■



Basking Sharks





Listeners, Watchers & Doers

— *Is it the agency or the instructor that's important?*

Text by Steve Lewis
Underwater photos by Kate Clark

So, there we sat—my buddy, a friend of hers, and I. Cups of good German coffee in front of us, the reassuring murmur of passing tourists behind us, and the slightest hint of spring blowing in over the Rhine. As we settled down to relax and work out whether the rest of the day would be spent shopping or sightseeing, my buddy's friend asked that most basic of questions, one that most divers who have decided to venture into more advanced, so-called technical diving ask, "What's more important: a good instructor or the agency?"

I told her the answer is simple. "But," I said, "Do you mind if I ask you a really important question before I answer yours? How do you learn? What type of "student" are you?"

In their most basic form, the triggers or stimuli that change our understanding of a topic and cause us to modify our behavior based on new-found knowl-

edge fall into three broad categories: auditory, visual and experiential. Based on this, we can say that students are either Listeners, Watchers or Doers. I suggested she sip her coffee and allow me to explain in a little more detail, because to answer her question, I needed her to think about mine.

I told her that in academic sessions, each of these broad learning groups identifies themselves as follows.

Listeners

Auditory learners listen to instructions attentively. During classroom sessions, they take notes, sit in the front of the room, avoid outside distractions, and—as my university classmates would confirm—often repeat important points to themselves in a mumble (sub-vocalize) as they take notes.

I explained to her that if like me, she too was a listener, she will rehearse and repeat information out loud some- times read- out loud. She will make



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extensive use of mnemonics, often ones she makes up herself. Listeners do better on a test if they read the questions out loud to themselves much to the annoyance of folks around them. And listeners may memorize key points and terms by thinking how the words sound as much as what they mean.

Watchers

On the other hand, visual learners often make charts or diagrams covering key points. These folks think in pictures. They highlight notes with big arrows, underlinings, stars and asterisks. If you are a visual learner, you doodle on printed notes and handouts, draw boxes around and circle key points. You scribble in the margins of textbooks. You scan those books for diagrams, graphs, charts and pictures and study these before anything else.

You tend to link basic concepts and new information to things and concepts you already know and understand. You may make flash cards to help memorize new ideas. Your books sport Post-it notes, and you often study "the basics" before sitting in a classroom. Oh, and if your pre-classroom studies use the so-called "Cornell Note" system, chances are you prefer this style of learning.



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Doers

Kinesthetic (or experience) learners are doers. They fidget in a classroom setting and get distracted during straight lectures, preferring to ask questions and participate in the discussion. They ask what-if type questions and personalize concepts, often asking for examples of how the topic under discussion applies to them or imagining personal scenarios and asking if they have the "right idea."

During a break, these folks get up and amble about, stretching, bending and generally "shaking out the cobwebs." They do better when classroom sessions are short and sweet, punctuated with hourly "breakout sessions" during which they can bounce ideas around with classmates. If you have one of those squishy stress balls in one hand and a book in the other while studying, chances are that you are a kinesthetic learner.

Real world approaches

Once out of the classroom and faced with a challenge to solve—a practical test or having to apply a recently learned concept to real-world circumstances—these three learning types present more distinctive approaches. I gave an example

of how that works. Let's say the "problem" presented to a group of recently certified open-water divers is to go away and research how many litres (or cubic feet) of gas are needed for a 30-minute dive to 18 metres (60 feet).

The listeners will call a more experienced buddy and ask for his or her advice. They may call a shop or drop in and speak face-to-face with an instructor to learn how to solve the problem. These folks best respond to the administrations of mentors.

Seeing learners will go online and use Google. They may go to a dive shop, but their preference would be to find a book on dive planning. They might find a YouTube video that explains the concept via charts and diagrams. These folks do best studying alone.



Doers will strap on a tank, go to 18 metres and use a stop-watch to time how long it takes to drain a tank! They were the kids who jumped off their parents' garage roof trying out their new glider design.

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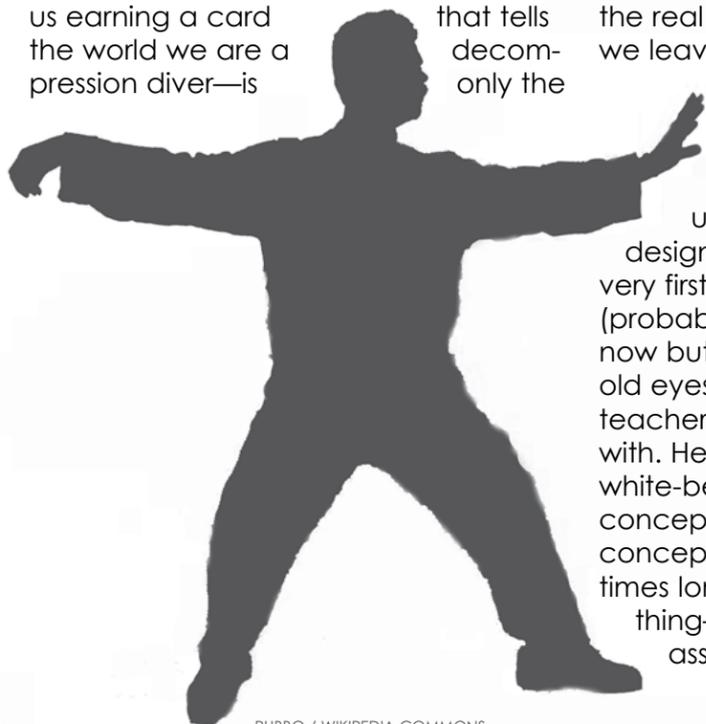
tech talk

Of course, to add a level of complexity to the situation, most of us are a mixed breed and have a little of each type of learner in us. But, in general, I told her that the first step in providing an answer to her question would be to identify which learning type she is.

Optimization

The whole point of identifying one's personal learning style is that once it is defined, there are ways to improve one's uptake and optimize one's future learning. For example, by knowing our weaknesses and trying to enhance skills in these 'soft' areas, we can improve our ability to soak up information next time we want to learn something.

It might also do some good for those readers who are asking the instructor-agency question to understand that a scuba program—let's take as an example a course that will end with us earning a card that tells the world we are a decompression diver—is only the



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FILE PHOTO: KATE CLARK

beginning of the journey into becoming an accomplished deco diver. At the end of the program, you have simply earned the right to continue your training. And by definition, that training will be mostly self-directed. In effect, the real learning process begins when we leave the class; it does not end there.

10,000 hours

Around 40 years ago, I signed up for the first of many classes designed to teach me Tai Chi. My very first teacher was an old dude (probably a little younger than I am now but he looked old to my 23-year old eyes). He was possibly the best teacher/instructor I've ever worked with. He instilled in us—his enthusiastic white-belted charges—two valuable concepts. The first is the 10,000 hours concept. It takes that long, and sometimes longer, to become expert at anything—including martial arts, and by association, the collection of

basic skills required of scuba diving. Therefore, if one is looking for instant gratification and "gain without pain" look for another pastime.

Looked at from a slightly different perspective, but sticking with the martial arts theme, Bruce Lee is quoted as saying: "I fear not the man who has practiced 10,000 kicks once; I fear the man who has practiced one kick 10,000 times." If we subscribe to this philosophy—and I do—practice is key to any training regimen and any success.

Owning it

The second concept was about owning a skill. It follows on from the 10,000 repetitions or 10,000 hours idea. My martial arts teacher told a story—one of those Zen or Chan parables. A student of martial arts was enjoying some success, and was asked to go away and practice by his master. A couple of years later, the student returned and the master asked how he was doing.

"Fine," he said, but he admitted that a couple of the moves caused him problems.

"I think I am doing them a little differently to the way you do them," he said. So the master sent him away to practice some more. A couple of years later, the student returned and when asked, admitted that things had gotten worse. "Now there are several more moves that I am doing differently. Not sure what's going on," he said. This cycle of going away and doing more practice, and coming back to his master went on for several more years until finally, the student sat at his master's feet and explained that he no longer did anything exactly the way his master originally taught him. "It is all completely different, he moaned. The master asked the student to go through the exercises, and when he was finished the master stood up, bowed to him and congratulated him. "You are now a master," he said.

Either way you look at it—skills devel-

CAN'T RESIST THE CALL OF THE UNKNOWN?

...neither can we!

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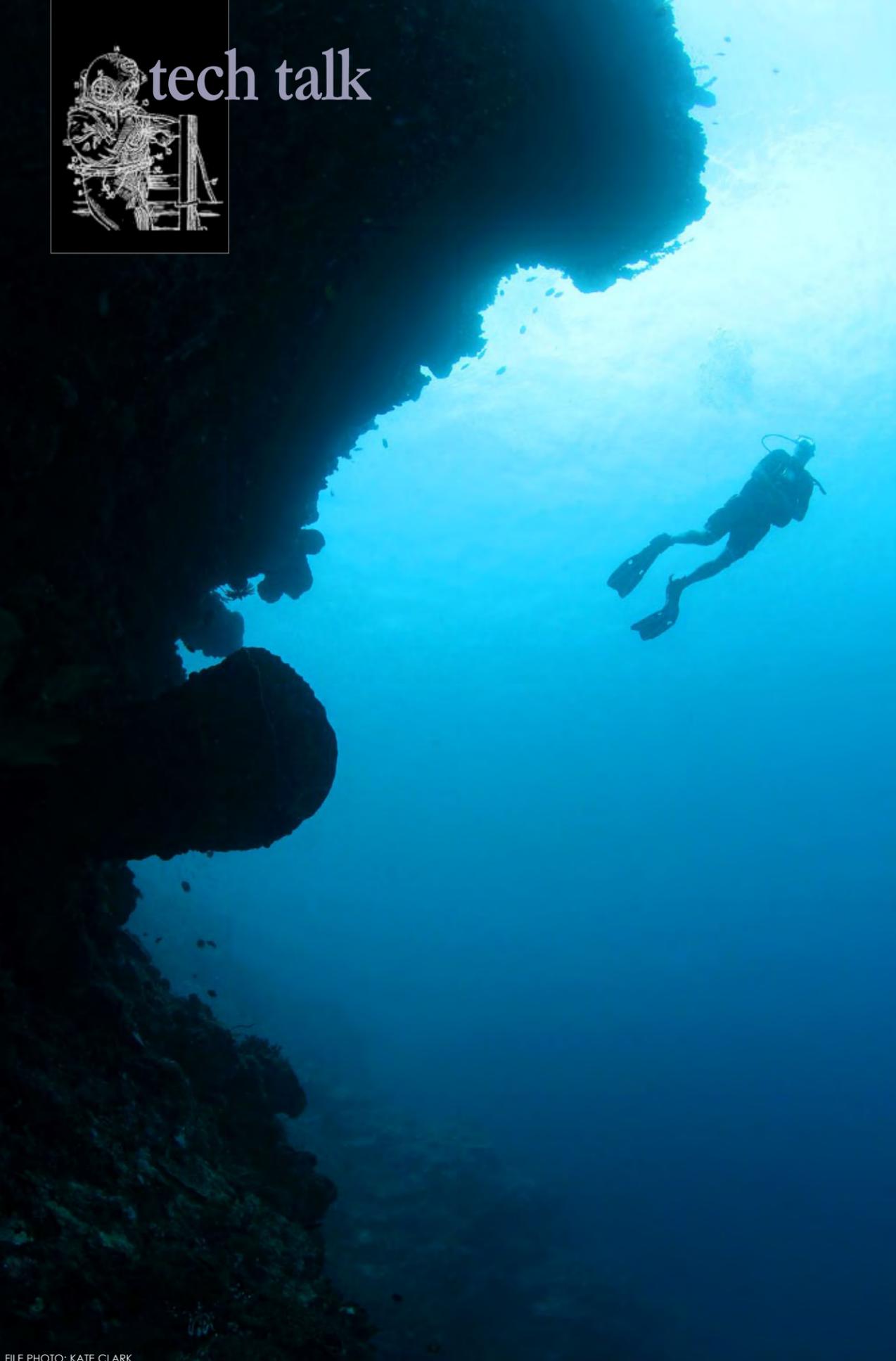
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opment—a five- or six-day zero to hero program, regardless of the agency, and to some extent even the instructor, is not going to achieve much. In truth, training—which is at the core of my friend's question—is not at all about the instructor nor the agency.

Self-motivation

Adult learning is actually about self-motivation. We get the most out of a learning situation if we understand the process of learning, and if we also understand that different situations and environments often require different learning (and teaching) strategies. We get more out of a learning opportunity if we develop the largest possible repertoire of classroom and practical tactics from which to draw. And when we understand, it's up to us to learn and grow.

In other words, a large part of the responsibility to learn and improve understanding—whether the topic is diving or quantum physics—is on our shoulders, and the structure of the curriculum and attentions of the instructor begin to fade into secondary or tertiary importance.

Agency relevance

For an instructor running a business, choosing the “right” agency may have some significance. An instructor has to find an organization that suits her business model and her comfort zone.

But even that is somewhat mitigated by other issues. For example, a decent instructor is going to modify how she presents course materials and what constitutes a pass or a fail based on her personal understanding of what works for her students, the environment in which the programs are conducted, and the best long-term strategy for the student to develop after the course is over.

For a student interested in developing



FILE PHOTO: KATE CLARK

skills rather than flashing pieces of plastic around, the agency becomes rather immaterial, and the chemistry with the instructor is important—initially that is.

Unfortunately, in an age of instant gratification and the suppression of individuality, a lot of us look for shortcuts and the easy way out—or in. We want to join a club. We are perfectly willing to wear a badge even at the risk of compromising our personal talents and our personal growth. A badge lets the world know we belong. It also does not require us to teach ourselves. The questions are all answered for us in the one-size-fits-all club members rule book. We don't even need to think.

There really is no difference between paying US\$200 for a \$40 sweater because of the logo on the front or telling folks you are an XYZ diver or an ABCD diver. It is in effect, all a fallacy, but people do it because it's an easy sell to themselves and their mates.

So, after more coffee and a lot of prattling on, I finally explained to my buddy's friend: “Before we ask ourselves what's more important—the agency or the instructor—it's important to have some understanding of one's personal

preferences, because people learn most effectively when the strategies used are closely matched with their preferred learning style. Moreover, we can be a little proactive and we can improve the effectiveness of our learning by knowing what our strengths are and, initially at least, putting some bias on what works best for us.”

With a little tap on the tabletop, and the sound of the U-bahn rolling by she said. “Okay, now I get it. It's not about the agency or the instructor. It's about me.”

And that's exactly what I should have said initially. ■

Steve Lewis is an active technical diver and instructor based in North America. He is an author, blogger and workshop host with a special interest in diver education and the development of safe diving protocols. He first tried sidemount scuba as a young dry-caver in the United Kingdom, and now many decades later, carries a TDI sidemount cave instructor rating and is an open-water/overhead environment Sidemount Instructor for PSAI. See Techdivertraining.org



photo &
video

Edited by Don Silcock

Text and photos by Don Silcock

In this series of articles on mirrorless cameras, we have explored the potential of this new technology by, first of all, looking at what it is and why it may be suitable for underwater photography. Then we looked at the various cameras, lens choices and available underwater housings, which quickly narrowed down the field to the Micro Four Thirds (MFT) technology from Olympus and Panasonic and the NEX cameras from Sony.

I used those initial articles to help define my personal choice—opting to buy the Olympus OM-D EM-5 camera, the Panasonic-Leica 45mm and Olympus 60mm macro lenses together with a Nauticam housing and macro port. In the subsequent articles, I documented my initial experience with those lenses, together with the Panasonic 20mm and Sigma 30mm “pseudo” macro lenses.

In this article, the final one in the series, I will explain my personal experience with wide-angle underwater photography using the Olympus OM-D EM-5 camera.

Dynamic range

When it comes to underwater wide-angle photography, probably the single most important technical characteristic of a digital camera is its dynamic range, which is basically the capability of its sensor to record detail in both the shadows and highlights.

With macro photography, the dynamic range is rarely very wide, as there are typically no extreme highlights if an image has been properly exposed, so virtually all modern digital cameras are eminently capable of doing a good job of macro with the right lenses and in the right hands.

Wide-angle photography, however, is quite different—with many of the best images in this genre, and certainly the ones that really have that “wow” factor, having a broad or even extreme dynamic range. A typical example being that in addition to the main subject of the image, the sun (or at least its rays) is

included in the image to provide a dramatic backdrop and create a vibrant and emotive photograph. Recording detail on the main subject is largely a function of using strobes to properly illuminate it, while capturing detail in the extreme highlights of the sun is very much related to the capability of the digital

camera's sensor.

Digital technology continues to advance rapidly, and the latest generation of full-frame sensors has really moved the goalposts on dynamic range, with the current overall champion being the Nikon D800, which the camera ratings site Dxomark.com measured at an

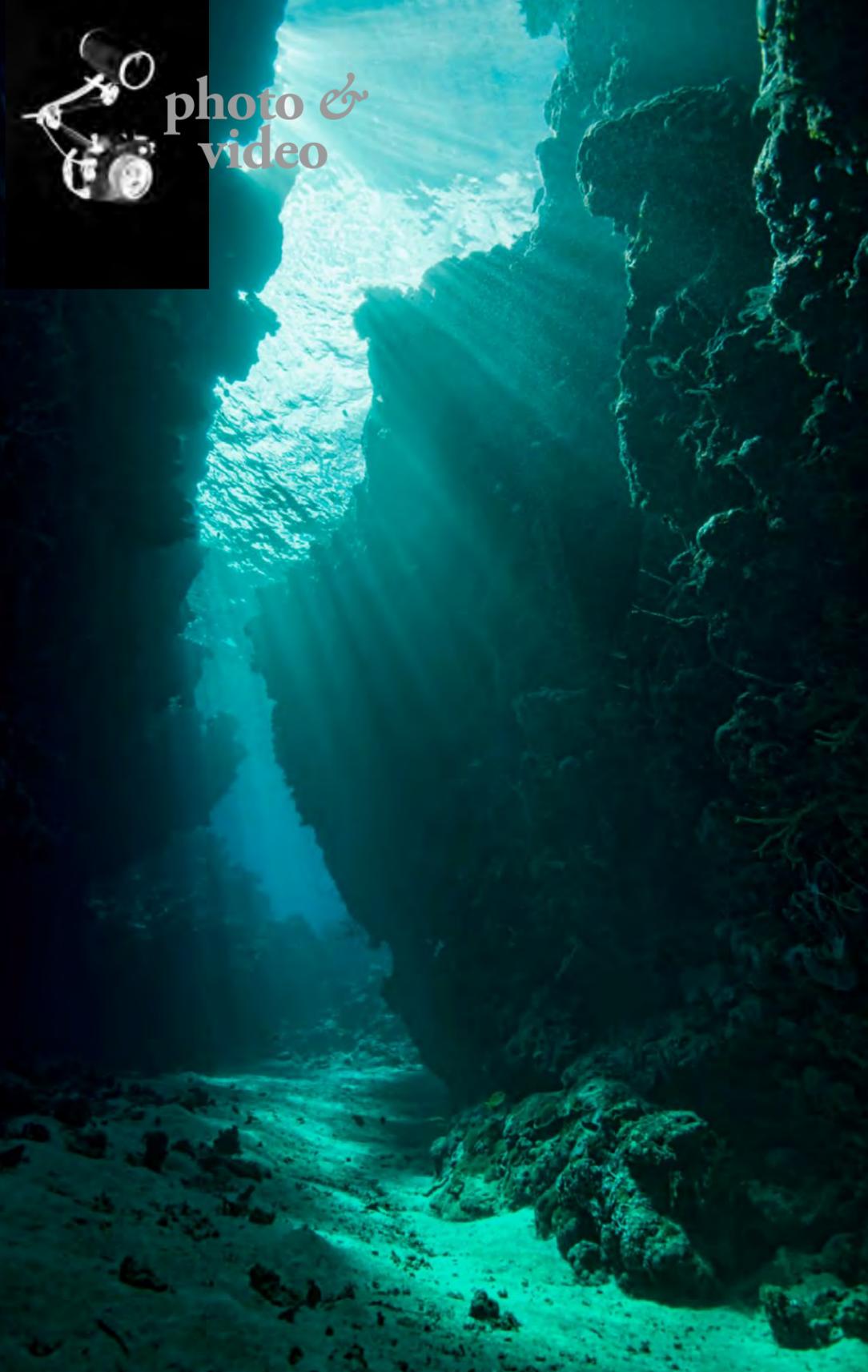


Mirrorless Cameras &

Wide-Angle

Underwater Photography





Example of the Nikon D800's dynamic range

desire to have a small and dedicated macro rig that could also double-up as back-up to my main D800 wide-angle outfit. Overall, my experience to date with the OM-D E-M5 has convinced me that mirrorless cameras offer a great alternative to DSLR's for macro photography because they are capable of producing excellent images but are smaller, lighter and most importantly cheaper, which lowers the entrance bar and has to be a good thing.

However, I was less convinced about wide-angle photography, as I doubted whether the Olympus' relatively small sensor had adequate dynamic range—although Dxomark.com did measure the E-M5 at a very capable 12.3 Evs.

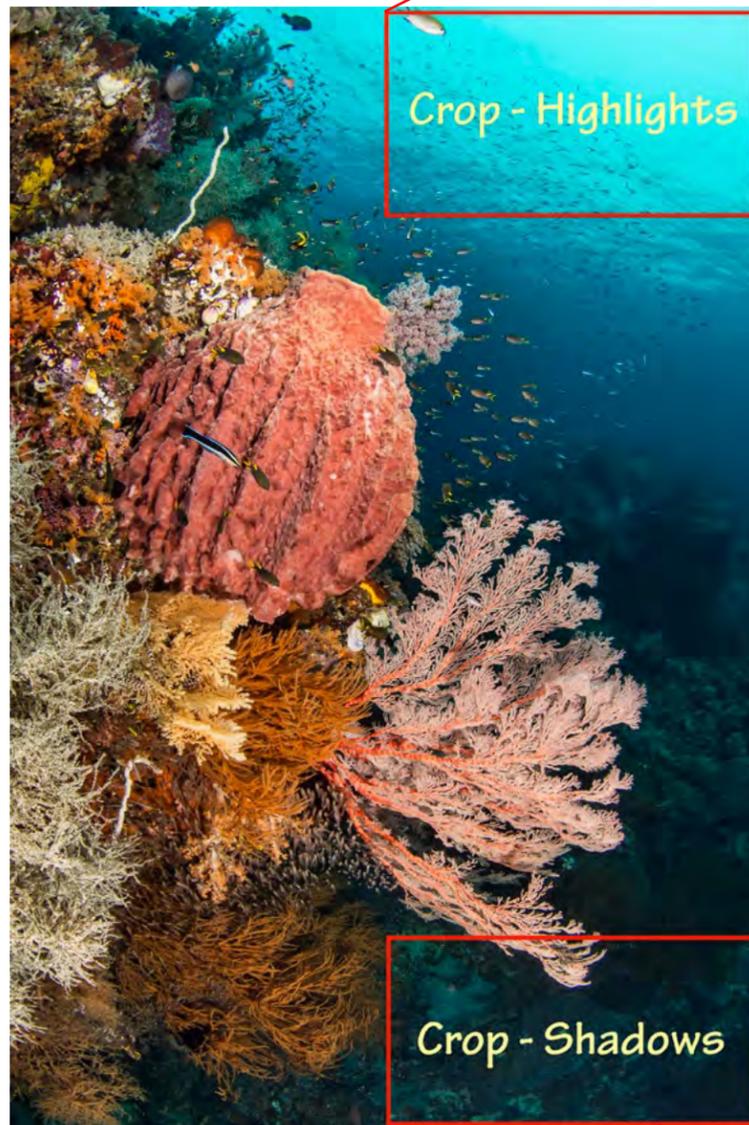
A recent trip to Raja Ampat, Indonesia, provided me with the chance to try out the E-M5 on sites I knew would provide numerous wide-angle photo-opportunities.

Lens and port options

The Olympus-Panasonic Micro Four Thirds technology has by far the best range of lens options for wide-angle underwater photography, with Panasonic offer-

ing its 8mm (16mm equivalent) fish-eye lens with a bright f3.5 maximum aperture and close-focus distance of just four inches. Panasonic also offers a very nice

Example of the OM-D E-M5's dynamic range: Cropped highlights (right); Cropped shadows (lower right)



opted for the Panasonic 8mm fish-eye and the small Nauticam 4.33-inch dome port that is designed specifically for it.

Testing

I will spare you all the gory details, but a variety of unplanned and unpleasant surprises

I was pleasantly surprised at the overall result, with the E-M5 producing a very nice image, while zooming in to 100 percent showed both detail and clarity in the highlight and shadow areas. While not at D800 levels of performance, the E-M5 produced a very nice image that could easily grace the walls of your living room or the pages of a magazine.

From there I wanted to see how the E-M5 would cope with strong highlights right in the image and a dive at Blue Magic in the Dampier Strait provided a quite unique photo-opportunity when one of the boat boys decided to check out who was on the deco line.

Similar crops of the highlights and shadows demonstrate that the OM-D E-M5 does a very credible job in



extreme rectilinear zoom lens—the 7-14mm zoom—which is their equivalent of Nikon's very highly regarded 14-24mm zoom. While Olympus offers their 9-18mm (18-36mm equivalent) zoom lens, which is both small and compact plus has a close-focus distance of just six inches.

The good news is that Nauticam supports all of these lenses. However, the bad news is that dedicated ports are required—not one dome port and different extension rings as is usually the case with DSLR's. So, I

turned my 28 days of diving in Raja Ampat into just 12, and all my carefully laid plans for a variety of different tests had to be boiled right down to the bare minimum. So, I decided to start by establishing how the E-M5 would perform on a clear water reef scene with a bright highlight in one corner of the image and dark shadows in another.

such situations—again, not D800 quality but most acceptable.

What about the ISO?

No review of a camera's ability to capture wide-angle images would be complete without some discussion on what happens to the quality of the image as the ISO is increased.

incredible 14.4 Evs. This means that images that were not previously possible, because the dynamic range between the shadows and highlights was too

large, can now be captured.

Can mirrorless cut it?

My personal journey with mirrorless cameras was driven by a



photo & video

In today's digital age of full-frame sensors, ISO has become just another adjustable parameter that is used along with shutter speed and f-stops. But with the smaller sensors used in mirrorless cameras, there is not the same latitude to simply increase ISO as is the case with full frame sensors.

With my D800 I do not hesitate to increase the ISO up to 1600 or more when necessary, however, my experience underwater with the E-M5 was that above ISO 400 there was a noticeable deterioration in overall image quality. The results were still usable at ISO 800, but pixel peeping at 100% showed some serious noise in the shadows and over ISO 1000 was questionable in my opin-



Example of wide-angle photography with the OM-D E-M5 (below) at Blue Magic dive site in the Dampier Strait at Raja Ampat; Cropped highlights (left); Cropped shadows (lower right)

ion. All the OM-D E-M5 images used to illustrate this article were taken at ISO 400.

Conclusion

Alltogether the Olympus OM-D E-M5 is a very impressive camera, and I have been very pleased with its performance. It's not perfect and comparing it to the D800, which costs almost three times as much, is not really fair, but wide-angle photography can be a challenge, and very often the



best technology wins the day by enabling the user to take the best image.

So would I give up my D800 for the E-M5 for wide-angle photography? No! Do I consider the E-M5 as a great back-up for the D800? Absolutely, yes!

It will be very interesting to see what results come from new mirrorless cameras as the manufacturers push the technology envelope—particularly the very impressive Sony A7 and A7R full-frame cameras and the Olympus top of the range OM-D E-M1 camera.



Watch this space... ■

Don Silcock is a Bali based photo-journalist who specializes in underwater and travel photography. His articles and images can be seen on his websites www.indopacificimages.com and www.nomadicpixel.com.

Example of wide-angle photography

Wide-angle



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Edited by
Don Silcock

PRODUCT SHOTS
COURTESY OF THE
MANUFACTURERS

Gates Deep Dragon Housing

Gates Underwater Products has released their housing for the Red Digital Epic Dragon digital cinema camera. The quite exceptional Epic Dragon camera features 6K lines of resolution, more than 16 stops of dynamic range and native 2000 ISO. The Gates Deep Dragon housing includes a housing for the Red Pro external monitor and uses the Redmote remote control to provide access to all camera controls. The Deep Dragon housing is available now at a U.S. retail price of \$18,280.



Nauticam Sony A7 Housing

Nauticam has announced the releases of their new housing for the Sony A7 and A7R full-frame mirrorless cameras. The NA-7 housing is provided with a switch that allows the user to choose either the Sony's LCD or EVF, plus it has a Nikonos 5-pin bulkhead allowing strobes to be directly connected to the camera.

Nauticam is also in the process of producing an adaptor that will allow the use of both the Sea & Sea 12mm fisheye and Nikonos 15mm lenses. The NA-7 housing is shipping with a U.S. retail price of \$2,850.

Aquapazza APSO-DPM Housing

Japanese manufacturer Aquapazza has announced the release of their new APSO-DPM Housing. The new housing is designed for the Sigma Merrill DP system compact cameras, which feature a high resolution Foveon APS-C sensor. The new APSO-DPM housing has a modular lens port system to allow it to be used with all three cameras in the Sigma Merrill DP system, which is supplied with a choice of three fixed lens options. The Aquapazza housing also features a rail for the attachment of a sun shield for the LCD screen and a fibre optic port for strobe triggering.



Aquatica AE-M1 Housing

Canadian housing manufacturer Aquatica has announced they will release their new housing for the very highly regarded Olympus OM-D E-M1 mirrorless camera at the end of March. While it will be some time before the new housing is actually available, the news that Aquatica is again producing housing for mirrorless cameras is a welcome development and another indicator that these cameras have real traction. The Aquatica AE-M1 housing is machined from aluminum, black anodized and then for further protection, a resistant polyester electrostatic powder coat paint is provided. Rated to a depth of 300 feet and will have the small form factor that mirrorless cameras enable, plus Aquatica has also announced a new range of ports that will be used on the housing, thus enabling the use of the extensive set of lenses available for the OM-D E-M1. The AE-M1 housing is priced competitively at US\$1,699 and will be available in March 2014.

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Ikelite D5300 Housing



Ikelite has released a housing for the new Nikon D5300 mid-level entry DSLR. The housing is constructed from Ikelite's signature clear polycarbonate, has access to all the important camera controls and features built-in TTL strobe triggering when used with the company's DS-series strobes.



Olympus OM-D E-M10 Mirrorless Camera

Olympus has announced the third mirrorless camera in its flagship OM-D range, the OM-D E-M10. The new camera is positioned as the entry-level to the highly regarded OM-D range but still features most of the functionality of the OM-D E-M5, which has won multiple awards for its overall functionality. The OM-D E-M10 features the TruePic VII image processor, a 16 megapixel Live MOS sensor, Wi-Fi technology, a large, high-speed electronic viewfinder, 3-axis image stabilization, ultrafast autofocus and a built-in flash. Olympus also released the MCON-PO2 macro converter that can adapt six Olympus Micro Four Thirds lenses for close-up shooting. The OM-D E-M10 will be available from March at a U.S. retail price of \$700 for the body only.

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Aquatica A1D-C/X Housing

Aquatica has announced details of their A1D-C/X housing for the Canon EOS-1D C and 1D X professional grade cameras. The new housing features a redesigned, next-generation, lens gearing system with a smaller housing pinion gear and a larger lens gear, allowing for a much smoother action while zooming in a video sequence. In addition, it has five bulkheads, two of which are occupied with Nikonos or Ikelite connectors as standard plus the housing is provided with Aquatica's pressure leak detection "check" circuitry. The housing is only available from Samy's Camera in the United States and retails at \$4,599.



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Michael Frank



P O R T F O L I O

portfolio

Michael Frank

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PREVIOUS PAGE:
Undersea Creatures V,
by Michael Frank. Acrylic
on canvas, 24x30 inches
(61x76cm)

Inspired by the magical ambience in the works of early American artists painting scenes with great attention to detail, color and dramatic light, Michael Frank works layer upon layer on canvas to produce brilliant underwater scenes echoing the sumptuous yet mysterious nature of marine life on reefs and in rivers and streams. *X-RAY MAG* interviewed the artist based in St. Louis, Missouri, to gain insight into his art and perspectives on the underwater realm.



Undersea Creatures II, by Michael Frank. Acrylic on canvas, 24x30 inches (61x76cm)

X-RAY MAG: Tell us about your background and how you developed your artistic process.

MF: I have been painting for over 35 years. I do not have a formal education in art. Some college and art workshops. I developed my artistic skills mainly from the study of an early American artist group of the mid-19th century known as the "Hudson River School".

X-RAY MAG: What is your artistic mission or vision?

MF: My artistic vision is to use my imagination to its fullest extent.

X-RAY MAG: What is it about the underwater world and its creatures that inspire you?

MF: My inspiration comes from the vast colorful variations of plant and coral

formations and the enormous variety of undersea creatures that many of us have little knowledge of—their beauty and life dramas.

X-RAY MAG: Tell us about your experience in the underwater world, scuba diving or snorkeling. How and why did you start diving/snorkeling?

MF: I have been to the Caymans, Belize, Virgin Islands, Oahu, the

Undersea Creatures II by Michael Frank. Acrylic on canvas, 24x30 inches (61x76cm)





Undersea Creatures IV,
by Michael Frank. Acrylic
on canvas, 24x30 inches
(61x76cm)

Undersea Creatures VI,
by Michael Frank. Acrylic
on canvas, 24x30 inches
(61x76cm)

Undersea Creatures III,
by Michael Frank. Acrylic
on canvas, 24x30 inches
(61x76cm)



Mexican coast of Yucatan and Cozumel. I have not had the courage to scuba dive, but I do snorkel whenever I visit these places. My interest in the underwater world was stirred over the years by TV's *Sea Hunt* and movies like *The Deep*.

X-RAY MAG: What are your favorite dive sites, underwater subjects, locations?

MF: My favorites are the beaches of Barbados and Cozumel. I also like the areas around Mexico's Cancun and Tulum where you can see a wide variety

of fresh and saltwater fish.

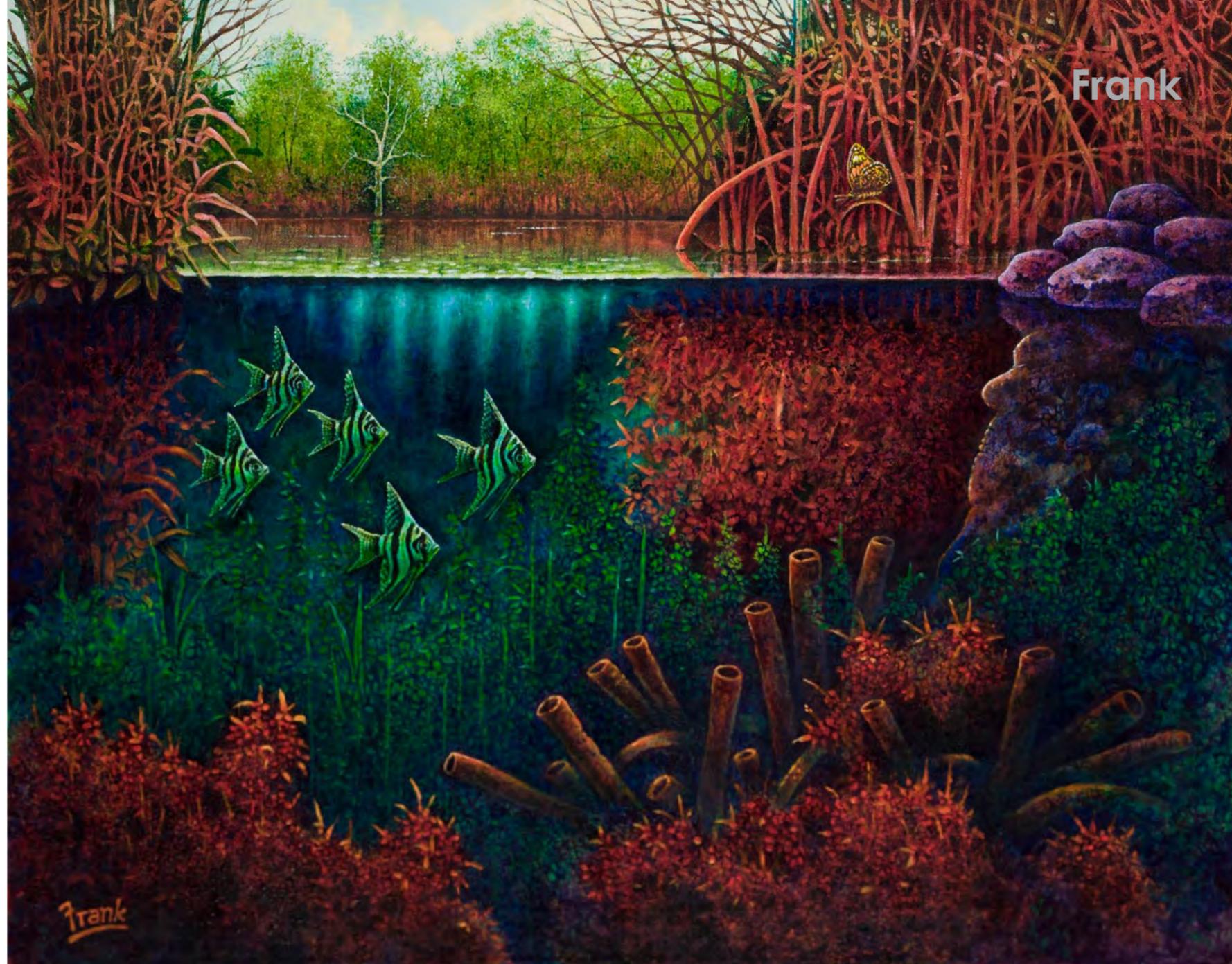
X-RAY MAG: Tell us about your paintings. How are they made? Please describe what is unique about your method or concept. How do you compile your underwater scenes? What informs your art?

MF: First I draw several composition sketches. Then I will start to paint with many layers of thin glazes of acrylic paint on canvas. Sometimes I will start with acrylic fluorescent paints to get the brilliant colors needed to portray fish and

coral dynamically, then tone them down with darker shades of the same color.

X-RAY MAG: Do you use underwater photography—your own or someone else's—and how is it incorporated in your art work? If it is your own underwater photography, what camera equipment do you use and why?

MF: My underwater photography is very low tech (disposable plastic encased cardboard cameras). I mainly rely on photos in magazines and the Internet (permission freely given) of individual



Amazon, by Michael Frank. Acrylic on canvas, 24x30 inches (61x76cm)

fish, underwater plant life and coral formations. I then take these many different pieces and arrange them to my liking. Then I add my own background to come up with my own composition with dynamic lighting for each painting.

X-RAY MAG: How does your art relate to conservation or environmental issues facing our oceans and reefs?

MF: I hope my paintings make people aware of the beauty and importance of undersea life—not just the popular large whales and sharks but the smaller less known delicate wildlife of the deep. Also I hope to inspire people to do what they can to preserve nature above and below the water surface.

X-RAY MAG: Why art? Why is art important? What are the challenges and

benefits of being an artist today?

MF: There is a tremendous challenge to become a popular artist. The competition for recognition (among millions) is overwhelming. You must develop skills not only with your art but with self-promotion and unique ways to get your art in front of the viewer. The monetary rewards for an artist may be few. Art is important to me because it gives me

Kingfisher, by Michael Frank. Acrylic on canvas, 36x24 inches (91.5x61cm)



Sunset, by Michael Frank. Acrylic on canvas, 24x36 inches ((61x91.5cm))

the power to touch someone. To bring back fond memories. To make people aware of their beautiful surroundings. To alter a mood. To dramatize the quest for survival or happiness. I think each artist must decide for themselves whether to measure their success with money or how their artwork touches others. Many artists (including myself) measure with both.

X-RAY MAG: What's next? New? Upcoming?

MF: To continue to paint our world's creatures, both large and small, in their natural surroundings. To do my best to glorify them. To warm our hearts to them and be thankful for their creation.

I like to do paintings in series. I hope you not only view my *Undersea Creature* series but my

other series as well: *Little World*, *Forest Never Sleeps*, *Bird in Paradise*, *Jungle Harmony*, *Sunshine Traveler*, *Romantique* and my new upcoming series *Baby Love*. ■

For more information and to purchase originals and prints, visit the artist's website at: www.Michael-frank.artistwebsites.com. Or email: mfrank1026@aol.com.

Blueboy, by Michael Frank. Acrylic on canvas, 24x18 inches (61x46cm)

